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MONTHLY LETTER OF THE BUREAU OF ENTOMOLOGY  
UNITED STATES DEPARTMENT OF AGRICULTURE

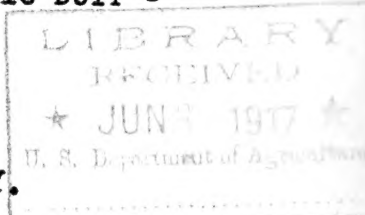
Number 37.

May, 1917.

"SOME MAY BE FORTUNATELY ELIGIBLE FOR ENLISTMENT: MANY MORE MAY BE OF GREATER  
VALUE TO THE COMMONWEALTH THROUGH THE ACTIVITIES IN WHICH THEY ARE AT PRE-  
SENT ENGAGED: BUT ANY AND ALL MAY FULFILL THEIR FIRST PATRIOTIC DUTY -

BUY A LIBERTY BOND NOW!"

COOPERATIVE SERVICE COMMISSION, BUREAU OF ENTOMOLOGY.



Pursuant to memorandum of Dr. Howard, April 20, the Advisory Committee to the Chief, Bureau of Entomology, was duly established with Mr. C. L. Marlatt, Chairman of Committee, and special meetings were held on April 23, 26, and 28. The first number of the official publication of the Committee, known as the "Emergency Entomological Service," was issued May 1, 1917.

This bulletin is devoted to reporting cooperation between Federal, State and Station entomologists and other agencies, and is to be issued monthly.

#### BOOKS RELATING TO HEMIPTERA.

The Department Library has recently purchased, for the use of the Bureau of Entomology, such of the books and pamphlets in the collection of the late Philip R. Uhler as were not already in the library. These have been catalogued and are filed with Mr. E. H. Gibson at the National Museum. This addition to the Department's collection of literature on Hemiptera will admirably supplement the collection of the late Otto Heidemann which the Museum hopes to purchase later.

#### LIST OF WORKERS IN HEMIPTERA: 2, HOMOPTERA.

The second part of the list of American workers in Hemiptera, entitled the "Homoptera (exclusive of Aphididae, Aleurodidae and Coccidae)" went to press May 19. This is compiled by Edmund H. Gibson, of the Bureau and all enquiries should be so addressed.

#### THE WORK ON STORED INSECTS.

War conditions greatly emphasize the importance of the control of insects damaging stored grain and other stored foods. In Russia the leading entomologists were called in conference on this subject many months ago. In this emergency it has been decided to strengthen the work of the Bureau in this direction by establishing a distinct section or branch for the especial handling of this important problem.

Work on insects of this character has hitherto been successfully prosecuted by Doctor Chittenden in addition to his work on insects affecting truck crops in itself is a vast field of enormous importance at the present time and which will

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Work on insects of this character has hitherto been successively prosecuted by Doctor Chittenden in addition to his work on insects affecting truck crops in itself is a vast field of enormous importance at the present time and which will

now practically take his full attention. The Secretary of Agriculture has appointed Dr. E. A. Back to the new position, "Entomologist in Charge Stored-Product Insect Investigations." Doctor Back will proceed to the field at once and begin an investigation of grain-storing methods. Doctor Chittenden will, in addition to his other duties, continue for a time to act in an advisory capacity in regard to stored-food insects and will complete and publish studies already under way that relate to this line of research. L. O. HOWARD.

YOU SHOULD BUY A LIBERTY BOND TO AID IN PERPETUATING THOSE IDEALS  
WHICH YOUR FOREFATHERS HELD HIGHER THAN PERSONAL COMFORT WHEN THEY  
HELD THE LAND AGAINST INVADERS:

WHAT DO THESE NAMES MEAN TO YOU?

KING'S MOUNTAIN! CHAPULTEPEC! GETTYSBURG! SANTIAGO!

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#### INSECTS FOR BACTERIOLOGICAL STUDY.

As Entomologists are aware, very little of a definite character is known concerning bacterial diseases of insects in general. It will not be possible, therefore, in many instances to make at once a diagnosis of the disease condition present. To find and actually prove the cause of a disease more often requires years than months. Definite statements, therefore, regarding the cause of a disease will not be possible for some time after the material is received.

In sending dead insects for bacteriological study, as a rule it will be well to use the medium or larger size glass vials, preferably those without the neck. These can be sterilized by boiling ten or fifteen minutes in water, completely dried and stoppered loosely with cotton. Ordinarily it is best to use a vial for each insect, sending, if convenient, from three to six dead of the disease in the first shipment. If in the disease the body wall of the insect ruptures easily, a portion of the decaying mass may be smeared on the inner wall of the vial with a scalpel or similar instrument previously sterilized by boiling in water or by direct flame and cooled. The smear soon dries preventing further growth of saprophytic germs. In case the body wall of the insect dead of the disease remains comparatively tough the entire remains should be put into the vial allowing the body wall to remain intact. After receiving the first shipment, the particular disease may require special directions regarding later shipments. Work on the disease will be facilitated if healthy, live insects of the same species as those that are diseased can be sent also. The method of sending such insects is left to the judgment of the sender. (Signed) G. F. White.

#### REPORTS ON CEPHUS CINTUS WANTED BY C. N. AINSLIE.

Will the field men of the Bureau of Entomology please keep watch for and report on the presence of *Cephus cinctus*. This sawfly mines the stems of nearly all sorts of grasses and of some cereals, boring the stalk and filling it with a fine granular frass that is quite characteristic. These mined stems are usually cut squarely off near the surface of the ground, and the larva hibernates within the stub that remains in the earth. As a rule only the larger stems are attacked. Fallen stems noticed after September 1 should be split to learn if this fly is responsible. Any information that will aid in determining the distribution of this insect is earnestly requested. Material suspected of containing

under way that relate to this line of research. Dr. G. HENNIG, in regard to stored-food insects and their control and public health aspects, in addition to his other duties, continues to act as a consultant to the Ministry of Agriculture, beginning an investigation of insect-rodent control in the USSR, and to begin Product Insect Investigation. Dr. HENNIG, working with the USSR and other countries, has appointed Dr. M. A. BACH to the new position, "Associate of the Chief of Food- and Agriculture of Agriculture of the USSR." The University of Agriculture now practically takes full attention.

YOU SHOULD GET A LIBRARY CARD TO BE ABLE TO BORROW BOOKS  
WHICH YOUR WORKMATES HAVE INTEREST IN. IF YOU WANT TO  
BEND THE LINE AND GET THEM:

WENT ON WITH THE WORK

WING'S MONITOR: CHAIR LIFTING: CHAIR LIFTING: CHAIR LIFTING

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## REPORTS ON CRYPTIC CIRCLES PREPARED BY C. H. AINSWORTH.

Will the field men of the Bureau of Entomology please keep their eyes open for any report on the presence of Cophes cinctus. This usually means the absence of nearly all sorts of grasses and of some conifers, leaving the field and shrub in a fine granular mass that is quite characteristic. These mixed areas are usually cut squarely off near the surface of the ground, and the lower discoloration within the stub that remains in the field. As a rule only the larger stems are attacked. Fallow stems noticed after September 1 should be split to look for it. This fly is responsible. Any information that will aid in determining the distribution of this insect is earnestly requested. Material suggested or containing



the larvae or work of the larvae should be sent to Sioux City for examination. The Mississippi valley may be the eastern limit of its range, but this is not definitely known. It has recently been found as far south as Charleston, Mo., and occurs practically everywhere throughout the west. Although throughout the more southern portion of the middle west it is rare and difficult to find.

Address C. N. Ainslie, 5205 Morningside Ave., Sioux City, Iowa.

#### ALL ENTOMOLOGY EMPLOYEES TO COOPERATE WITH THE BUREAU LIBRARIAN.

In connection with the special work of entomologists brought about through war conditions it is noted that considerable material of ephemeral nature is appearing, both Federal and State, short letters, press notices, leaflets, circulars, posters etc. This, while of little permanent value, will have a certain historic interest later. The Bureau library will undoubtedly secure some of it through the regular channels but much also may be missed. It is requested therefore that those in charge of branches of the Bureau or of Bureau field stations will occasionally send to the library copies of such of this material as may have come to their notice and may have proven of special service at this time.

Dr. Howard and one or two members of the Bureau have recently adopted the system of filing in the Bureau library, temporarily, personal copies of current numbers of general scientific periodicals and other publications of general interest. While most of these publications may be found in the Department library, and they may also be called over to the Bureau upon special request, it is often quite a convenience to have them coming to the Bureau direct and in the case of the more popular scientific magazines which are in great demand we frequently see them more quickly than when they are called for through the Main Library. The librarian will be glad to have loans from those interested. All such loans will be returned to the owner within a month unless otherwise specified.

The librarian wishes to thank all those who have sent in separates for recording and filing. Please continue the attention.

DO NOT FORGET TO LIST ON YOUR INVENTORIES ALL BOOKS BELONGING TO THE DEPARTMENT LIBRARIES OR TO THE BUREAU LIBRARY.

#### INSECT MATERIAL WANTED.

The following live insect material is especially requested by the West LaFayette, (Ind.) laboratory:

Lachnosterna adults and larvae from every section of the United States.  
Tiphia and Elis cocoons and predaceous enemies of white grubs, such as Asilid larvae.

Cutworms, especially injuring cereal and forage crops.

Complete details, shipping boxes, etc., will be furnished on request.

Records of collections, parasites etc., will always be returned to the sender.

Address J. J. Davis, Box No. 95, West LaFayette, Indiana.

#### THE OFFICIAL BULLETIN.

On April 14, 1917, the President of the United States signed an Executive Order, creating the Official Bulletin. This bulletin is designed to furnish first-hand, authentic information, daily, pertaining to all matters of National defense,





plans, policies, and activities and thus with honesty and with profit combining the two functions, censorship and publicity concerning the conduct of public business. (The Official Bulletin is issued every weekday and may be had on application to E. S. Rochester, No. 10 Jackson Place, Washington, D. C. Subscription price: One year \$5.00; six months, \$3.00.)

#### APPLICATION OF PHENOLOGICAL DATA TO INSECT EMERGENCE AND CROP PLANTING.

One of the salient features of the initial number of the Emergency Entomological Service issued May 1, is covered under the title "Bioclimatic Law as Applied to the Hessian Fly", by A. D. Hopkins, Forest Entomologist, and is the first direct effort in the application of phenological data to insect emergence and crop planting. (Inquiries and suggestions should be addressed to Dr. A. D. Hopkins, Forest Entomologist, Bureau of Entomology.)

#### THE ZOOLOGICAL RECORD SUSPENDS PUBLICATION.

The Bureau of Entomology has received word that the Zoological Record, Regent's Park, London, N. W., England, has temporarily suspended publication, owing to the war.

YOUR BANK WILL NEGOTIATE A LIBERTY BOND FOR YOU ON AS SMALL A BASIS AS \$5.00 A MONTH! THE QUESTION IS NOT " CAN I AFFORD TO BUY A LIBERTY BOND --- BUT CAN I AFFORD NOT TO BUY ONE!

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#### SECRETARY OF AGRICULTURE NAMES TWO ASSISTANTS.

The Department of Agriculture issues the following:

"Dr. B. T. Galloway has been appointed Assistant to the Secretary of Agriculture for an indefinite period. His duties are primarily to act as the representative of the Department of Agriculture with representatives of other departments in matters connected with the Council of National Defense. President R. A. Pearson, of the Iowa State College of Agriculture, Ames, Iowa, also has been appointed Assistant to the Secretary. He will give the Secretary the benefit of his advice and assistance for an indefinite period. He will especially assist the department in keeping in touch with the State boards of food production and conservation." (Off. Bull. May 14.)

#### VISITORS TO THE BUREAU OF ENTOMOLOGY DURING MAY.

Dr. Durton N. Gates, Massachusetts Agricultural College, Amherst, Mass.  
A. F. Burgess, In Charge of Moth Work, Melrose Highlands, Mass.  
W. M. Mann, of Bussey Institution, Forest Hills, Mass., stopped over in Washington, on his way to the Bahamas. He will spend a month on Andros Island making collections to augment his insect material.  
Fred Muir, Assistant Entomologist of the Hawaiian Sugar Planters' Experiment Station, Honolulu, Hawaii, has arrived in Washington. He will spend about one week studying types of Hemiptera in the Bureau collection.  
D. M. Rogers, Gipsy Moth Investigations, Boston, Mass.  
W. F. Fiske, late of the Bureau of Entomology who has recently returned from the British service in Africa.

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## A NEW LIST OF PUBLICATIONS OF THE DEPARTMENT.

Notice is received of the issuance of a "List of Publications Issued Since July 1, 1913". (Revised to December 31, 1916.) Issued April 26, 1917. 114 pages. Copies may be obtained by request to Editor & Chief, Division of Publications, Department of Agriculture, Washington, D. C.

### STATE MAPS NOW AVAILABLE.

A supply of State maps, size 8" x 10 1-2", will shortly be available for use. These base maps are on white paper and show counties. Field employees desiring same should make application to their respective section chiefs.

### NEW AGRICULTURE DIVISIONS.

The Department of Agriculture announces:

"In order to handle to better advantage the work of combating tuberculosis of cattle and to carry on other activities for the conservation of the animal resources of the country, the Secretary of Agriculture has created two new divisions in the Bureau of Animal Industry. The changes became effective May 1.

- (1) The Tuberculosis Eradication Division\*\*\*\*\*
- (2) \*\*\*\*\* The Tick Eradication Division will be devoted exclusively to the work of eradicating the cattle fever tick in the South. (Off. Bull. May 14.)

### REPORT ON BEEKEEPING ACTIVITIES IN THE UNITED STATES.

The work reported in the last News Letter of sending circulars to beekeepers to urge them to increase production has progressed in a satisfactory manner. Circulars have now been sent to the complete list of beekeepers in sixteen States and in addition the State agencies have sent circulars to extensive lists of beekeepers in a number of cases. Over a dozen State beekeepers' associations have sent out special circulars to the members and some of the leading dealers in beekeepers' supplies are sending out such circulars to their customers. Every county agent in the United States has been supplied with a number of circulars for distribution and the honey-crop reporters of the Bureau of Crop Estimates have been circularized. In several cases State inspectors of apiaries are temporarily discontinuing their inspection in order to hold meetings of beekeepers. The response to these requests has been satisfactory to the highest degree and, while the May estimates of honey-plant conditions are slightly below normal, there is every reason to expect a greatly increased honey-crop in 1917. The work of circularizing beekeepers will be materially increased as soon as apparatus can be installed for doing more of the work mechanically.

#### LIBRARY

Miss Mabel Colcord, Librarian.

#### NEW BOOKS.

American nursery trade directory. 1917-1918. Rochester, N. Y., American Florists' Publishing Co., inc., 1917. 128p.

Barnes, Wm. and McDunnough, J. Check list of the Lepidoptera of boreal America. Decatur, Ill., Feb. 1917. 392p.

U. S. DEPARTMENT OF AGRICULTURE

Washington, D. C., July 1, 1914.  
Circular No. 100, 1914.  
Department of Agriculture.

U. S. DEPARTMENT OF AGRICULTURE  
WASHINGTON, D. C.

TO THE SECRETARY OF AGRICULTURE

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WASHINGTON, D. C.  
Circular No. 100, 1914.  
Department of Agriculture.

- British Museum (Natural History). Economic series no.2-3 London, 1915-1916.
2. The louse. Bruce F. Cummings.
  3. Fleas as a menace to man and domestic animals. James Waterston.
- Calvert, Mrs. Amelia C. Smith. A year of Costa Rican natural history, by Amelia Smith Calvert ... and Philip F. well Calvert... New York, 1917. 577 p. illus. plates. map.
- Fenneman, N. M. Physiographic divisions of the United States, 1917. (Annals of the Association of American geographers v.6, p. 19-98)
- Gatenby, J. B. The embryonic development of *Trichogramma evanescens*, Westw., nonembryonic egg parasite of *Dendrolimus simplex*, Fab. (Quar. jour. Micr. sci. n.s. no. 246 (v.62, pt. 2) p.142-187, pl. 10-12, Feb. 1917)
- Harrison, Launcelot. The genera and species of Mallophaga. (Parasitology v.9, no.1, p.1-156, Oct. 1916.)
- Marshall, C. E. Microbiology... 2d. ed. rev. & enl. Phila. (c 1917) 900p. illus. pl.
- New Jersey State Agricultural Experiment Station..Ann..Rept. 36... for 1915. Patterson, 1916. 394p.
- Paillot, A. Microbes nouveaux parasites des chenilles de *Lymantria dispar*. (Paris-Acad.Sci.Nat. Comptes rendus T. 164, no. 13, p. 525-527, Mar. 26, 1917)
- Peterson, Alvah. The head capsule and mouth-parts of Diptera, with twenty-five plates. (Illinois Biographical monographs v.3. no. 2. 112p. Oct. 1916)
- Root, A. I. and Root, E. R. The A B C and X Y Z of bee culture...Medina, O., 1917. 830p. illus.
- Official bulletin. Published daily under order of the President by the Committee on public information, Geo. Creel, Chairman. v.1, no. 1, May 10, 1917.  
"Designed to inform the public of the progress of the war and of official acts incident to its prosecution".
- U. S. Government printing office. Style book, a compilation of rules governing executive, congressional and departmental printing including the Congressional record. Ed. of Feb. 1917. 17p. (15 cents, Supt. Doc. Office.)
- U. S. Dept. Agr. Yearbook... 1916. Washington, 1917. 783p. 74 figs. 90 pl.
- Uruguay- Comision central de la defensa agricola. Memoria de los trabajos realizados contra la langosta-invasion de 1915-1916. Montevideo, 1916. 444p. pl. maps.
- Wisconsin University. Bulletin 828. Martin, H. G. & McKittrick, L. S. A Key to the identification of animal parasites found in human feces. 1917. 24p. illus.

BEE CULTURE.

E. F. Phillips, In Charge.

Dr. E. F. Phillips visited Philadelphia, New York and Boston early in May

United States

California

San Francisco

Golden Gate

Marina del Rey

Los Angeles

New York

Philadelphia

Pittsburgh

Rochester

Cleveland

Chicago

U. S. City

U. S. State

U. S. District

U. S. Court

U. S. Attorney

U. S. Marshal

U. S. Clerk



to study honey-market conditions. He was accompanied by Mr. Wells A. Sherman of the Office of Markets. Visits will also be made to the other chief wholesale markets for honey to gain information on which to establish the reports on market conditions and records of honey-crop movements which are to be issued by the Office of Markets. It is learned that the heavy demand for honey for export taken all the remainder of the 1916 crop at high prices.

The work on the effect of spraying on bees was conducted this year at the Drummond Laboratory.

Kennith Hawkins returned early in the month from an extended trip in Texas and Oklahoma. On May 7 he began a series of meetings in Virginia in cooperation with the Virginia Extension Service. Meetings will be held in all parts of the State during the next few weeks.

C. E. Bartholomew recently finished a three-weeks trip on a special bee, poultry and marketing train over the lines of the Nashville, Chattanooga and St. Louis R. R. This is the first agricultural train to be run in the United States on which special cars were set aside for beekeeping work. Reports received from railroad officials and others indicate that this was one of the most effective steps so far taken to build up the beekeeping industry in any State.

E. L. Sechrist of Fair Oaks, Calif., began work as Apicultural Assistant on April 23.

Several temporary assistants have been appointed recently to assist in the campaign for stimulating the beekeepers of the country to increase production.

Dr. Burton N. Gates, Massachusetts Agricultural College, and G. A. Cale, Maryland College of Agriculture, have been appointed collaborators to assist in the campaign for more money.

#### DECIDUOUS FRUIT INSECT INVESTIGATIONS.

A. L. Quaintance, In Charge.

R. A. Cushman, who has been in Washington doing systematic work on parasitic Hymenoptera, has returned to his field quarters, North East, Pa. to resume his studies of grape berry moth parasites. On his way to North East, Pa., he spent several days in the Academy of Natural Sciences, Philadelphia, Pa., in examining types of Hymenoptera.

Dwight Isely has completed manuscripts and reports on the grape berry moth and has returned to North East, Pa., to continue work in connection with grape-insect investigations.

E. B. Blakeslee, who is engaged in the study of peach insects, especially the peach borer, has returned to his field headquarters, Springfield, W. Va., to continue his field operations.

#### FEDERAL HORTICULTURAL BOARD.

C. L. Marlatt, Chairman.

A public hearing was held May 18, in Washington, for the purpose of considering the extension of the gipsy moth and brown-tail moth quarantine to cover four additional towns in New Hampshire, and one in Vermont.

Recent reports on the pink bollworm situation in Mexico indicate that this insect occurs at least over an area of 1200 square miles in the Laguna district, and that it seems probable that it also occurs elsewhere in Mexico on account of known distribution of seed from the Laguna for planting. This development makes it very doubtful whether it will be possible by any expenditure of money to exterminate this insect in Mexico.

to study honey-marked conditions. He was recommended by Mr. Walter A. Shumaker of the Office of Markets. Visits will also be made to the other chief wholesale markets for honey to gain information on which to base the reports on market conditions and records of honey-crop movements which are to be issued by the Office of Markets. It is learned that the heavy demand for honey for export taken all the remainder of the 1918 crop at high prices.

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#### APRIL 23. BEES AND FRUIT INVESTIGATION.

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As a result of the hearing held May 8, on the subject of the danger of the introduction of citrus canker with citrus fruit from the Orient, an order will shortly be issued by the Secretary of Agriculture prohibiting the importation from Eastern and Southeastern Asia, the Malayan Archipelago, the Philippine Islands, Oceania (except Australia, Tasmania, and New Zealand), Japan and the Union of South Africa, of all species and varieties of citrus fruits, except oranges of the tangerine and satsuma class. Oranges of this class can be entered only under permit from the Secretary of Agriculture, must be certified by the proper official of the country of origin as free from visible infection with citrus canker, and as having been grown in a grove free from this disease, and are subject to reinspection on arrival in this country by an inspector of the Department of Agriculture. The ports of entry will be limited to Seattle, and possibly certain other Northern Pacific Coast ports.

Owing to the fact that advantage was taken, by a large New England grower of white pines, of the leniency of the Department of Agriculture in postponing the effective date of the domestic blister-rust quarantine to June 1, to extensively advertise his stock, and to sell it and ship it to States which had quarantined against such stock, this quarantine was amended May 1 prohibiting the further shipment interstate to points outside the area comprising the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut, effective immediately.

Mr. August Busck started from Washington on May 15 for another exploration in Mexico to determine the extent of the distribution of the pink bollworm. He will pay special attention to portions of Mexico opposite Brownsville and Eagle Pass, Texas. His recent work in the Laguna district indicated that considerable quantities of cotton seed, probably infested by the pink bollworm, had been shipped from that region to points much nearer the United States.

The organization of the field force for the pink bollworm in Texas has been about completed. T. C. Barber is in charge, with headquarters at San Antonio. J. A. Dew and J. C. Hamlin are stationed at Eagle Pass, which at present is the most important port of entry for Mexican cottonseed products. A. C. Mason is located at Laredo. O. D. Deputy and C. C. Halbedl, students in the Texas A. & M. College, have been assigned to the work of inspecting cotton mills which received Mexican seed last year, and the fields occurring in their vicinities. On the first of June Ivan Schiller of the Texas College will be added to the force, as well as E. L. Diven of Cornell University. Later it will probably be necessary to station other inspectors at Eagle Pass and Brownsville.

#### FOREST ENTOMOLOGY.

A. D. Hopkins, In Charge.

Dr. Hopkins is spending the month at Kanawha Station, W. Va. Field Station in the prosecution of his studies on the relation of climate to the periodical phenomena of insects and to entomological problems; insects affecting shade tree and hardy shrubs; hickory insects, and insects injurious to forest products.

W. S. Fisher contemplates a study of the Buprestidae and will be glad to have adults sent to him for determination at the U. S. National Museum, Washington, D. C.

A. B. Champlain has been transferred from Lyme, Conn. to the Eastern Station at Falls Church, Va. where he is assisting Mr. Craighead in biological and field work and is working up his own notes on the biology of the Cleridae.

Miss M. A. MacNab has been appointed Clerk and assigned to Mr. Rohwer at the Eastern Station at Falls Church, Va.

As a result of the hearing held May 8, on the subject of the danger of the introduction of citrus canker with citrus fruit from the Orient, an order will shortly be issued by the Secretary of Agriculture prohibiting the importation from Eastern and Southern Asia, the Malay Archipelago, the Philippines, Islands, Oceania (except Australia, Tasmania, and New Zealand), Japan and the Union of South Africa, of all species and varieties of citrus fruit, except oranges of the range known as Valencia. (Copies of this order will be entered only under permit from the Secretary of Agriculture, and will be certified by the proper official of the country of origin as free from citric infection with citrus canker, and as having been grown in a grove free from this disease, and are subject to reinspection in any and all this country by an inspector of the Department of Agriculture. The period of entry will be limited to 6 months, and possibly certain other Northern Pacific Coast ports.

Owing to the fact that advantage was taken, by a large New England grower of white pines, of the leniency of the Department of Agriculture in postponing the effective date of the American Quarantine Act to June 1, to extensively advertise his stock, and to sell it and ship it to States which had quarantined against such stock, this quarantine was amended May 1 prohibiting the further shipment interstate to points and to the coast of the States of Maine, New Hampshire, Vermont, New York, and Pennsylvania, and to the Government, effective immediately.

Mr. August Wusey arrived from Washington on May 15 for another expedition in Mexico to determine the extent of the distribution of the pink bollworm. He will pay special attention to portions of the State of Sonora, the Yucatan and Eagle Pass, Texas. His recent work in the Laguna in the Yucatan has been considerable quantities of cotton seed, probably imported by the pink bollworm, had been shipped from that region to points such as New Orleans, New York, and other States.

The organization of the field force for the pink bollworm in Texas has been about completed. T. G. Barber is in charge, with headquarters at San Antonio. J. A. Dew and J. G. Hamilton are stationed at Eagle Pass, which at present is the most important port of entry for Mexican cotton into the United States. A. G. Mason is located at Laredo. G. D. Ramsey and G. H. Johnson, who are in the Texas A. & M. College, have been assigned to the work of inspecting cotton with a view to the Mexican seed last year, and have been working in the field since. On the first of June I was notified of the Texas situation, and will be glad to see you, as well as E. L. Olson of Cornell University. There is still probably no necessity to station other inspectors at Eagle Pass and Brownsville.

### FOREST ENTOMOLOGY. A. D. Hopkins, In Charge.

Dr. Hopkins is spending the month of March at Forest Station, W. Va. Forest Station in the protection of his studies on the relation of climate to the periodical phenomena of insects and on biological problems; in fact, entomological problems and hardy species; history, insect, and forest insects, to forest insects. W. S. Fisher contemplated a study of the life history of the Washington have adults sent to him for determination at the U. S. National Museum, Washington, D. C.

A. B. Chapin has been transferred to Forest Station, W. Va. Forest Station at Falls Church, Va. where he is assisting Mr. Granger in biological and field work and is working up his notes on the biology of the Chesapeake. Miss M. A. Martin has been appointed to Forest Station, W. Va. Forest Station at Falls Church, Va.

SOUTHERN FIELD CROP INSECT INVESTIGATIONS  
W. D. Hunter, In Charge.

G. A. Runner was transferred to Deciduous Fruit Insect Investigations on May 21. He will have headquarters at Sandusky, Ohio, and be engaged in the investigation of grape insects.

D. L. Van Dine visited Parchman, Miss., during the month for the purpose of instituting work on malaria mosquitos.

G. N. Wolcott has been appointed a special field assistant for the summer months. He will be engaged in the study of sugar cane insects in Louisiana and Texas.

It has been necessary to abandon the proposed trip of U. C. Loftin to Cuba for the purpose of collecting parasites of *Diatraea saccharalis*.

Torbert Slack has been appointed a temporary field assistant in connection with the boll weevil at Tallulah, La.

K. B. McKinney, A. D. Bosley, and F. G. Sorrells have been appointed temporary field assistants in connection with the work on tobacco insects at the Clarksville, Tenn., laboratory.

TROPICAL AND SUBTROPICAL FRUIT INSECT INVESTIGATIONS.  
C. L. Marlatt in Charge.

Dr. Back who for the past five years has been in charge under this section of the Mediterranean fruit fly and melon fly project in Hawaii, has, as noted elsewhere in this publication, been placed in charge of the new branch of stored product insects, and Mr. Morrison has been transferred from the Federal Horticultural Board to take up the work which Dr. Back was to have followed out, namely, a general insect survey of the West Indian Islands and Central and South American countries. This survey will have particular relation to fruit flies but will include other insect pests of plants and plant products which are likely to be brought into the United States through the agency of commerce from the region designated and which may easily become established in this country as pests. Mr. Pemberton will remain in charge of the work in Hawaii, with Mr. Willard as his principal assistant.

TRUCK CROP AND STORED PRODUCT INSECT INVESTIGATIONS  
F. H. Chittenden, In Charge.

INSECTS INJURIOUS TO TRUCK CROPS.

Cutworms have been normally injurious during the month of May but towards the end of the month a number of severe outbreaks have been reported. These come from the Gulf States and Worcester, Mass. At Vashon, Wash., Arthur J. King, Field Assistant, reports that on one truck farm where a 20-pound pail full of cutworms was collected on less than one-half acre of peas the cutworms which remained nearly ruined the crop. Injuries were reported in New Jersey and New York. The different species were not identified except in two cases. The greasy cutworm (*Agrotis ypsilon* Rott.) was reported injurious in New Jersey injuring cabbage, peas, and raspberry. Only moderate injury has thus far come to our attention in the District of Columbia and nearby points in Virginia and Maryland. The variegated cutworm was found in the District of Columbia, a severe outbreak occurred in Baltimore County, Md., where cutworms did great damage to tomato, cabbage, and onion plants, our informant reporting that it was feared that nothing would be left.





Root-maggots are injurious to cabbage, onions, turnips, beans, and other plants, injury having begun even near the District of Columbia about the first of May. Reports of injury have also been received from Washington State and elsewhere. The seed-corn maggot is the only species which has positively identified and this is the one which is probably causing the most trouble. "The first record of the occurrence of the striped cucumber beetle in Iowa was reported at Muscatine by Charles E. Smith, Scientific Assistant.

The Colorado potato beetle is generally destructive in the South from Louisiana to Texas and in Tennessee and Missouri; it made its first appearance this year on May 18.

The harlequin cabbage bug is late this season having been reported injurious in New Orleans, La., Memphis, Tenn.

Owing to the warm days, May 19, 20 and 21, injuries have been reported of various insects including the potato flea-beetle, the striped cucumber beetle, and various other insects from nearby points about the District.

The common cabbage worm will be mature around the District by about the beginning of June or a little later to produce a second generation which will attack garden-grown cabbage and related crops. The present generation is feeding on wild or volunteer turnip.

The cabbage aphid made its appearance at about the same time as the cabbage worms, and has been found in several cases on the same individual plants.

A cricket-like grasshopper, *Diestrammena marmorata*, has been reported doing much damage to radish and other plants grown in greenhouses at Milwaukee, Wis.

Several reports have been received of injury by the pavement ant in the District of Columbia; specimens have been identified. In one instance they were injuring lima beans; in another they were described as eating everything in the garden except onions.

Severe outbreaks of the melon aphid have been reported from Florida to Texas. Prof. F. B. Paddock, State Entomologist, College Station, Texas, writes, "The more we work upon the melon aphid the more we realize melon and truck growers of this State have suffered more loss than we appreciate". He reports the same experience which many of us have had, that kerosene emulsion is not always successful because of the inability of growers to prepare it properly. It is particularly difficult to prepare with alkali water. This Bureau is advising in ordinary cases at least 8 or 10 minutes pumping until a true emulsion similar to cod-liver oil is formed.

The bean aphid continues to be the cause of complaint in California where four employees of this branch of the Bureau are giving the matter attention in cooperation with other experts. The problem of how to treat these insects will most likely be solved during the season. Nicotine sulphate is the best remedy yet tried.

Sowbugs are doing considerable injury in Texas, and in other regions. Slugs and snails have also been reported injurious.

The strawberry root weevil (*Otiorhynchus ovatus*) has been reported destructive by Arthur J. King, Field Assistant, Vashon, Wash., and Frank R. Cole, Scientific Assistant, Hood River, Oreg.

The raspberry leaf-miner, probably *Metallus rubi*, has been reported by Henry Kleuver, Secretary, Dover Grape Growers Association, Dover, Ohio, as being injurious. Nicotine sulphate was not successful.

Severe outbreaks of the bean leaf-beetle have been reported from nearby points about the District of Columbia, in Maryland and Virginia, by Messrs. A. C. Baker, B. A. Reynolds, and W. H. White, employees of the Bureau of Entomology.

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The Colorado Springs Post-Record  
Location to Texas City, Tex.  
this year on May 18.

ions in New York City, 1950-1951, 1952-1953, 1954-1955, 1956-1957, 1958-1959, 1960-1961, 1962-1963, 1964-1965, 1966-1967, 1968-1969, 1970-1971, 1972-1973, 1974-1975, 1976-1977, 1978-1979, 1980-1981, 1982-1983, 1984-1985, 1986-1987, 1988-1989, 1990-1991, 1992-1993, 1994-1995, 1996-1997, 1998-1999, 2000-2001, 2002-2003, 2004-2005, 2006-2007, 2008-2009, 2010-2011, 2012-2013, 2014-2015, 2016-2017, 2018-2019, 2020-2021, 2022-2023, 2024-2025, 2026-2027, 2028-2029, 2030-2031, 2032-2033, 2034-2035, 2036-2037, 2038-2039, 2040-2041, 2042-2043, 2044-2045, 2046-2047, 2048-2049, 2050-2051, 2052-2053, 2054-2055, 2056-2057, 2058-2059, 2060-2061, 2062-2063, 2064-2065, 2066-2067, 2068-2069, 2070-2071, 2072-2073, 2074-2075, 2076-2077, 2078-2079, 2080-2081, 2082-2083, 2084-2085, 2086-2087, 2088-2089, 2090-2091, 2092-2093, 2094-2095, 2096-2097, 2098-2099, 2100-2101, 2102-2103, 2104-2105, 2106-2107, 2108-2109, 2110-2111, 2112-2113, 2114-2115, 2116-2117, 2118-2119, 2120-2121, 2122-2123, 2124-2125, 2126-2127, 2128-2129, 2130-2131, 2132-2133, 2134-2135, 2136-2137, 2138-2139, 2140-2141, 2142-2143, 2144-2145, 2146-2147, 2148-2149, 2150-2151, 2152-2153, 2154-2155, 2156-2157, 2158-2159, 2160-2161, 2162-2163, 2164-2165, 2166-2167, 2168-2169, 2170-2171, 2172-2173, 2174-2175, 2176-2177, 2178-2179, 2180-2181, 2182-2183, 2184-2185, 2186-2187, 2188-2189, 2190-2191, 2192-2193, 2194-2195, 2196-2197, 2198-2199, 2200-2201, 2202-2203, 2204-2205, 2206-2207, 2208-2209, 2210-2211, 2212-2213, 2214-2215, 2216-2217, 2218-2219, 2220-2221, 2222-2223, 2224-2225, 2226-2227, 2228-2229, 2230-2231, 2232-2233, 2234-2235, 2236-2237, 2238-2239, 2240-2241, 2242-2243, 2244-2245, 2246-2247, 2248-2249, 2250-2251, 2252-2253, 2254-2255, 2256-2257, 2258-2259, 2260-2261, 2262-2263, 2264-2265, 2266-2267, 2268-2269, 2270-2271, 2272-2273, 2274-2275, 2276-2277, 2278-2279, 2280-2281, 2282-2283, 2284-2285, 2286-2287, 2288-2289, 2290-2291, 2292-2293, 2294-2295, 2296-2297, 2298-2299, 2300-2301, 2302-2303, 2304-2305, 2306-2307, 2308-2309, 2310-2311, 2312-2313, 2314-2315, 2316-2317, 2318-2319, 2320-2321, 2322-2323, 2324-2325, 2326-2327, 2328-2329, 2330-2331, 2332-2333, 2334-2335, 2336-2337, 2338-2339, 2340-2341, 2342-2343, 2344-2345, 2346-2347, 2348-2349, 2350-2351, 2352-2353, 2354-2355, 2356-2357, 2358-2359, 2360-2361, 2362-2363, 2364-2365, 2366-2367, 2368-2369, 2370-2371, 2372-2373, 2374-2375, 2376-2377, 2378-2379, 2380-2381, 2382-2383, 2384-2385, 2386-2387, 2388-2389, 2390-2391, 2392-2393, 2394-2395, 2396-2397, 2398-2399, 2400-2401, 2402-2403, 2404-2405, 2406-2407, 2408-2409, 2410-2411, 2412-2413, 2414-2415, 2416-2417, 2418-2419, 2420-2421, 2422-2423, 2424-2425, 2426-2427, 2428-2429, 2430-2431, 2432-2433, 2434-2435, 2436-2437, 2438-2439, 2440-2441, 2442-2443, 2444-2445, 2446-2447, 2448-2449, 2450-2451, 2452-2453, 2454-2455, 2456-2457, 2458-2459, 2460-2461, 2462-2463, 2464-2465, 2466-2467, 2468-2469, 2470-2471, 2472-2473, 2474-2475, 2476-2477, 2478-2479, 2480-2481, 2482-2483, 2484-2485, 2486-2487, 2488-2489, 2490-2491, 2492-2493, 2494-2495, 2496-2497, 2498-2499, 2500-2501, 2502-2503, 2504-2505, 2506-2507, 2508-2509, 2510-2511, 2512-2513, 2514-2515, 2516-2517, 2518-2519, 2520-2521, 2522-2523, 2524-2525, 2526-2527, 2528-2529, 2530-2531, 2532-2533, 2534-2535, 2536-2537, 2538-2539, 2540-2541, 2542-2543, 2544-2545, 2546-2547, 2548-2549, 2550-2551, 2552-2553, 2554-2555, 2556-2557, 2558-2559, 2560-2561, 2562-2563, 2564-2565, 2566-2567, 2568-2569, 2570-2571, 2572-2573, 2574-2575, 2576-2577, 2578-2579, 2580-2581, 2582-2583, 2584-2585, 2586-2587, 2588-2589, 2590-2591, 2592-2593, 2594-2595, 2596-2597, 2598-2599, 2600-2601, 2602-2603, 2604-2605, 2606-2607, 2608-2609, 2610-2611, 2612-2613, 2614-2615, 2616-2617, 2618-2619, 2620-2621, 2622-2623, 2624-2625, 2626-2627, 2628-2629, 2630-2631, 2632-2633, 2634-2635, 2636-2637, 2638-2639, 2640-2641, 2642-2643, 2644-2645, 2646-2647, 2648-2649, 2650-2651, 2652-2653, 2654-2655, 2656-2657, 2658-2659, 2660-2661, 2662-2663, 2664-2665, 2666-2667, 2668-2669, 2670-2671, 2672-2673, 2674-2675, 2676-2677, 2678-2679, 2680-2681, 2682-2683, 2684-2685, 2686-2687, 2688-2689, 2690-2691, 2692-2

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...and had no idea of what was going on.

Several other persons, including the following, were also present at the time of the shooting:

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"The more we know of the world, the more we know of our own minds."

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1. The first of these is the fact that the majority of the population of the United States is now living in urban areas. This is a result of the process of urbanization, which has been going on since the beginning of the 20th century. The process of urbanization is the movement of people from rural areas to urban areas. This is done for a variety of reasons, including the search for better living conditions, the desire for education, and the need for employment. The process of urbanization has led to the growth of large cities and the decline of small towns. This has had a significant impact on the way we live and work. For example, it has led to the development of new technologies and industries, and it has changed the way we think about the world. The process of urbanization is still going on, and it is likely to continue for many years to come. This is because there are still many people who are looking for better living conditions, and there are still many people who are looking for employment. The process of urbanization is a complex one, and it is one that has shaped the world in many ways. It is a process that we cannot ignore, and it is one that we must understand if we are to understand the world in which we live.

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Baker, B. L. Reynolds, and L. H. White, employees of the Bureau of Land Management, points about the District of Columbia, in Washington, D. C. Bureau of Land Management of the Department of the Interior, Washington, D. C.

## INSECTS INJURIOUS TO STORED PRODUCTS.

The Mediterranean flour moth (*Ephestia kuehniella* Zell.) has been reported from several new localities in Kentucky, Washington State, Ohio, Minnesota, Pennsylvania, and Oklahoma.

The fig moth (*Ephestia cautella* Walk.) has been reported injurious in Michigan.

### CEREAL AND FORAGE INSECT INVESTIGATIONS W. R. Walton, In Charge.

#### NOTES FROM THE WEST LA FAYETTE (IND.) FIELD STATION.

During April two substitutions have been established for this season, one at Nashville, in southern Illinois with the Hessian fly as the major problem, and one at Richland, near Battle Creek, Mich., with white grubs as the important problem. Mr. Larrimer will be located at Nashville until July 1 when he will then transfer the major Hessian-fly investigation to southern Indiana, leaving the experiments at Nashville in care of C. P. Reither. Mr. Turner will be stationed at Richland, Mich., for the summer and will make special studies regarding the use of repellents for the control of May beetles, and of soil insecticides for the control of white grubs.

Mr. Larrimer reports the Hessian fly as making its appearance in southern Illinois April 9, during a mild spell immediately following a cold period.

The extent of white-grub infested area seems to be spreading, especially in Michigan, and it seems probable that the beetles will be as abundant as they were three years ago. Mr. Turner gathered about 700 May beetles by following 3/4 mile of furrow at Richland, Mich.

Mr. Arthur Gibson, Assistant Dominion Entomologist of Canada, visited this station in connection with cooperative work in cereal and forage insect investigations.

Mr. E. M. Schalck, assistant to Dr. Forbes for northern Illinois, also visited this station to consider insect problems in northern Illinois of mutual interest.

We are desirous of obtaining *Lachnosterna* adults and larvae from every section of North America. In all cases specimens should be sent in alive if possible, thus we can obtain not only distribution data but can use the specimens to obtain possible parasites. Live grubs, especially from infested areas, are needed. Any parasites, especially *Tiphia* and *Elis* cocoons, and any predaceous enemies of grubs such as *Asilid* larvae are likewise needed. Complete details, shipping boxes, etc., will be furnished on request. Records of collections, parasites, etc., will always be returned to the sender. Cutworms, especially those injuring cereal and forage crops, are likewise solicited.

During April and early May weather conditions in our territory have been unseasonably cold and wet, greatly hindering the planting of corn, and the growth of corn which had been planted during the warm spell in April. As a result of this cold and wet weather no insect activities of importance have been noted. Wheat has made good growth and Hessian fly is scarce excepting in the immediate vicinity of fields which were sown early last fall and contained a heavy fall infection. Under date of May 16, Mr. Larrimer reports that the Hessian fly is beginning to go into the flaxseed stage in southern Illinois.

Chinch bugs were observed in abundance in occasional fields in southern

INSECTS INJURIOUS TO STORED PRODUCTS.

The Mediterranean flour moth (*Tenebrio molitor* L.) has been reported from several new localities in Kentucky, West Virginia, Ohio, Indiana, Tennessee, and Oklahoma. The fig moth (*Plodia interpunctella* Walk.) has been reported injurious in Michigan.

CEREAL AND FORAGE INSECT INVESTIGATIONS  
W. R. Walton, in Charge.

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During April two expeditions have been conducted for this season, one at Nashville, in southern Illinois with the Hessian fly as the major problem, and one at Richmond, near Battle Ground, Mich., with white grubs as the important problem. Mr. Larimer will be located at Nashville in July when he will then transfer the major Hessian-fly investigation to southern Indiana, leaving the experiments at Nashville to one of A. T. Bolton or Mr. Turner will be stationed at Richmond, Mich., for the summer and will continue studies regarding the use of repellents for the control of May beetles, and of soil insecticides for the control of white grubs.

Mr. Larimer reports the Hessian fly as making its appearance in northern Illinois April 9, during a mild spell immediately following a cold period. The extent of white-grub infestation is spreading, especially in Michigan, and it seems probable that the beetles will be as abundant as they were three years ago. Mr. Turner gathered about 700 May beetles by following 3/4 mile of furrow at Richmond, Mich.

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Mr. E. M. Scholck, assistant to Dr. Fowler for northern Illinois, also visited this station to consider insect problems in northern Illinois of mutual interest.

We are desirous of obtaining *Tenebrio molitor* adults and larvae from every section of North America. In all cases specimens should be sent in alive if possible, thus we can obtain not only distribution data but can use the specimens to obtain possible parasites. Live grubs, especially from infested areas, are needed. Any parasites, especially *Tiphia* and *Elia* cocoons, and any predaceous enemies of grubs such as *Aspilid* larvae are likewise needed. Complete details, shipping boxes, etc., will be furnished on request. Records of collections, parasites, etc., will always be returned to the sender. Cutworms, especially those injuring cereal and forage crops, are likewise solicited.

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Chinch bugs were observed in abundance in occasional fields in southern

Illinois during the latter part of April and these are now actively laying eggs. However, it is impossible to determine whether or not they will become sufficiently abundant to do any considerable damage. W. P. Flint, of Dr. Forbes's office is making a careful survey throughout southern and western Illinois but the weather conditions have prevented him from determining the status of the chinch bug with certainty. Our observations indicate there will be no chinch-bug injury in southern Indiana.

The cold weather has also held back the flight of May beetles at least two weeks.

Cutworms are common in hotbeds where the compost was made up this spring of old sod and the indications are that in some localities, cutworms may occur in abundance.

Mr. Larrimer reports observing a scattering infestation of the true army worm, first and second instars, in blue grass in low ground. They have not, however, been observed in any great numbers. *Cirphis unipuncta* adults have occurred in few number at our La Fayette lantern trap the past few nights. Within the past week the weather has warmed up and farmers are busily engaged in planting corn and the next few weeks will determine whether or not the chinch bug and cutworms will be important factors in the growing of crops this season.

(Signed) John J. Davis.

#### NOTES FROM THE WELLINGTON (KANS.) FIELD STATION.

The Wellington field station has moved from its old quarters at 618 North Olive Street to 910 North Poplar Street. The building is located in the extreme northwestern corner of the town. It is a nice ten-room house, and is comfortably situated.

Hessian fly has been active recently. Fear is apprehended for devastation in some central counties in Kansas. The southern part of Kansas will be infested, but hope that no devastation may occur.

There have been several heavy flights of *Blissus leucopterus* from hibernation quarters, to wheat fields, during the last few days. Egg-laying has not yet begun.

A substation has been located at Falls City, Neb., where a farm for experimental plats has been secured, and H. J. Hart, recently appointed to the service, has taken charge.

A first-class light trap has been erected at the laboratory and will be run two nights each week, for the purpose of catching insects of economic importance, and studying their habits of flight. If any member of the Bureau force desires specimens of a particular group, family, or genus, we would be glad to send the catch to him.

(Signed) E. O. G. Kelly.

ARE YOU DEBARRED FROM ENLISTING? A LIBERTY BOND IS A POIGNANT WEAPON IN THE HANDS OF THE NONCOMBATANT!

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